

Claim Listing This listing of claims will replace all prior versions and listings of claims in the application:

1 - 63: (cancelled)

64. (currently amended) An expression vector optimized for use in bacterial E. coli cells comprising a first nucleic acid sequence encoding a peptide extension for enhancing the solubility and proper folding of a protein or polypeptide of interest, wherein the encoded peptide extension is selected from the group consisting of: Peptide T7C (SEQ ID NO: 5), Peptide T7B (SEQ ID NO: 6), Peptide T7B1 (SEQ ID NO: 7), Peptide T7B2 (SEQ ID NO: 8), Peptide T7B3 (SEQ ID NO: 9), Peptide T7B5 (SEQ ID NO: 11), Peptide 10 T7B6 (SEQ ID NO: 12), Peptide T7B7 (SEQ ID NO: 13), Peptide T7B8 (SEQ ID NO: 14), Peptide T7B9 (SEQ ID NO: 15), Peptide T7B10 (SEQ ID NO: 16), Peptide T7B11 (SEQ ID NO: 17), Peptide T7B12 (SEQ ID NO: 18), Peptide T7B13 (SEQ ID NO: 19), Peptide T7A1 (SEQ ID NO: 21), Peptide T7A2 (SEQ ID NO: 22), Peptide T7A3 (SEQ ID NO: 23), Peptide T7A4 (SEQ ID NO: 24) and Peptide T7A5 (SEQ ID NO: 25), the expression vector further comprising a multiple cloning site for inserting in which, in-frame with said first nucleic acid sequence, a

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second nucleic acid sequence encoding said protein or
20 polypeptide of interest, having a carboxyl- and an amino-
terminus, is inserted in-frame with said first nucleic acid
sequence, wherein expression of the first and second
nucleic acid sequences yields a fusion protein consisting
essentially of the encoded peptide extension fused to the
carboxyl-terminus of the protein or polypeptide of
interest.

65 - 98: (cancelled)

99. (new) An E. coli expression vector for enhancing
the solubility and proper folding of an encoded protein or
polypeptide of interest, which protein or polypeptide
comprises an amino and a carboxyl terminus, said vector
comprising a first nucleic acid sequence encoding a peptide
extension, which peptide extension is selected from the
group consisting of: Peptide T7C (SEQ ID NO: 5), Peptide
T7B (SEQ ID NO: 6), Peptide T7B1 (SEQ ID NO: 7), Peptide
T7B2 (SEQ ID NO: 8), Peptide T7B3 (SEQ ID NO: 9), Peptide
10 T7B5 (SEQ ID NO: 11), Peptide T7B6 (SEQ ID NO: 12), Peptide
T7B7 (SEQ ID NO: 13), Peptide T7B8 (SEQ ID NO: 14), Peptide

T7B9 (SEQ ID NO: 15), Peptide T7B10 (SEQ ID NO: 16), Peptide T7B11 (SEQ ID NO: 17), Peptide T7B12 (SEQ ID NO: 18), Peptide T7B13 (SEQ ID NO: 19), Peptide T7A1 (SEQ ID NO: 21), Peptide T7A2 (SEQ ID NO: 22), Peptide T7A3 (SEQ ID NO: 23), Peptide T7A4 (SEQ ID NO: 24) and Peptide T7A5 (SEQ ID NO: 25), a multiple cloning site in which a second nucleic acid sequence encoding the protein or polypeptide of interest is inserted in frame with said first nucleic acid sequence, and wherein expression of the first and second nucleic acid sequences under physiological conditions yields a fusion protein consisting of the encoded peptide extension fused to the carboxyl terminus of the protein or polypeptide of interest.

100. (new) An expression vector optimized for use in bacterial cells comprising a first nucleic acid sequence encoding a peptide extension for enhancing the solubility and proper folding of a protein or polypeptide of interest, wherein the encoded peptide extension is selected from the group consisting of: Peptide T7C (SEQ ID NO: 5), Peptide T7B (SEQ ID NO: 6), Peptide T7B1 (SEQ ID NO: 7), Peptide T7B2 (SEQ ID NO: 8), Peptide T7B3 (SEQ ID NO: 9), Peptide

T7B5 (SEQ ID NO: 11), Peptide T7B6 (SEQ ID NO: 12), Peptide
10 T7B7 (SEQ ID NO: 13), Peptide T7B8 (SEQ ID NO: 14), Peptide
T7B9 (SEQ ID NO: 15), Peptide T7B10 (SEQ ID NO: 16),
Peptide T7B11 (SEQ ID NO: 17), Peptide T7B12 (SEQ ID NO:
18), Peptide T7B13 (SEQ ID NO: 19), Peptide T7A1 (SEQ ID
NO: 21), Peptide T7A2 (SEQ ID NO: 22), Peptide T7A3 (SEQ ID
NO: 23), Peptide T7A4 (SEQ ID NO: 24) and Peptide T7A5 (SEQ
ID NO: 25), the expression vector further comprising a
multiple cloning site in which a second nucleic acid
sequence encoding the protein or polypeptide of interest
having a carboxyl- and an amino- terminus is inserted in-
20 frame with said first nucleic acid sequence, wherein
expression of the first and second nucleic acid sequences
yields a fusion protein consisting of the peptide extension
fused to the carboxyl-terminus of the protein or
polypeptide of interest, wherein the bacterial cells are
selected from the group consisting of E. coli, B. subtilis,
and R. eutrophus.